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# Tamil Nadu: This man helps students see science through toys

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CHENNAI: It is believed that science ‘takes’ place only in the labs. But there are people like toy-inventor and science expert Arvind Gupta, who believe otherwise: Science lies all around us. “We are stereotypical about science that it can only be done wearing a white coat. Science is the way we critically look at things around us. There is science in everything around us — from a used needle to pieces of paper,” said Arvind Gupta.

To explain his point, Arvind took two pieces of valve tube of a bicycle and three match sticks. After removing the chemical from the matchsticks, he inserted half of each match stick into the valves. A triangle appeared and soon it transformed into a square followed by a rectangle. “The flexibility of the tube allows us to create any angle. I used only pieces of valve tube

and match sticks. Basics of science come from simple things, but we don’t realise it,” he said, speaking on “Science through toys” as part of the Varahamihira Science Forum’s monthly lecture at the Tamil Virtual Academy on Saturday.

When Arvind Gupta demonstrated how to make a motor and a generator using straws, copper wire, battery and disposable syringe, it took many by surprise. “Our electrical devices use various types of motors and generators. I created a motor and a generator using materials that cost only ₹20 each. It’s that simple. Unfortunately, subjects like science and mathematics are taught in schools without realising this fundamental truth,” he said. Arvind made many toys and explained the scientific significance associated with each, using material found around us during his one-hour demonstration-lecture.

It was while working as a maintenance engineer with the Tata Engineering & Locomotive Company (TELCO), Pune, Arvind decided to take the off-beaten track and explore the world of science through toys. A brief stint with Kishore Bharati, an NGO started by Anil Sadgopal, helped. In 1978, Arvind took a year's study leave from TELCO to work with the village science teaching programme for children in the tribal district of Hoshangabad, Madhya Pradesh. One day, he visited a remote village in Hoshangabad where a weekly market was on. He bought a piece of every trinket sold and developed many lowcost science teaching aids.

The possibilities of using ordinary things for turning science and recycling modern junk into joyous products appealed immensely to children. "It was a turning point in my life and I never looked back. I have been teaching students for more than 35 years, but the interesting part is that each time I learn something new from them," said Arvind Gupta, whose first book "Matchstick models and other science experiments" has been translated into 13 Indian languages. Since then he has written 10 books and translated over 45 books on science, environment and education.